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Relation Between the Proper Motion and Magnitudes of 1240 Stars.

Professor J. G. Porter has recently issued in the *Publications of the Cincinnati Observatory* a catalogue of *1240 Proper Motion Stars*. At the suggestion of Professor Holden, I have collected these results to determine the relation between the proper motion and the magnitude of a star. In order to make such a comparison, it is necessary to find the resultant of the proper motions in Right Ascension and Declination, or proper motion in a great circle as it is usually termed. A large number of the stars contained in Professor Porter's catalogue are also given in the catalogue of Dr. Stumpe (*A. N.*, Nos. 2999 and 3000) and in the latter the proper motion in a great circle is given. For all stars common to both catalogues the proper motions of Dr. Stumpe have been adopted and the proper motions in a great circle of the remainder have been determined by the following formulas:

$$\mu_0 \sin x = \Delta\, \alpha \cos \delta$$
$$\mu_0 \cos x = \Delta\, \delta$$

in which μ_0 is the proper motion in a great circle. The proper motions of the two catalogues agree very closely in most instances, so if there is no systematic difference between them, and there seems not to be, then there can be no objection to combining the data of the two catalogues, as has in fact been done.

As a result of this work the following table was formed:

Magnitude.	Proper Motion.	Number of Stars Observed.	Number of Stars North of Equator.
1. to 3.5	0″.56	73	661
3.6 " 4.5	0.57	78	2,613
4.6 " 5.5	0.47	138	8,670
5.6 " 6.5	0.44	275	20,173
6.6 " 7.5	0.43	354	82,227
7.6 " 8.5	0.43	348	274,541
8.6 " 9.5	[0.59]	72	783,534

In all cases the magnitudes of Porter's catalogue have been used. The numbers in the last column were taken from Peirce's table of equable distribution, *Annals of H. C. O.*, vol. IX, page 26.

If the last horizontal line, in which the proportion of stars

observed is so small as not to warrant the drawing of any conclusions from the results, is left out of consideration, then the table shows a gradual decrease in the proper motion as the brightness decreases, which indicates that in general the brightest stars are our nearest neighbors. S. D. TOWNLEY.

THREE-FOOT REFLECTING TELESCOPE FOR SALE.

An advertisement in *Astronomy and Astro-Physics* for February, 1892, announces that the three-foot reflecting telescope made for Dr. A. A. COMMON and afterwards sold by him to Mr. GLEDHILL is for sale, together with its Dome, etc. The price is not given. This is the instrument with which Mr. COMMON made his beautiful photographs of the Nebula of *Orion*, etc., for which he received the gold medal of the Royal Astronomical Society in 1884.

Such an instrument is exactly suited for photographs of nebulæ, comets and planets, and also for spectroscopic observations, and the capital results obtained by Dr. COMMON in the uncertain climate of England, give some idea of what might be expected if it were mounted in a situation like that at Mount Hamilton. I know of no better way to supplement the large refracting telescope of the LICK Observatory than by adding a large reflector to our equipment. The site for such an instrument is already selected and the work awaits it. The important item lacking is the money to provide for the cost of the instrument itself. E. S. H.

METEOR-FALL IN OREGON, DECEMBER 16, 1892.

ALBANY, Oregon, December 17, 1892.

"About five o'clock yesterday morning FRED REIS saw a bright meteor approaching from the southeast. It was traveling very rapidly, and with a rushing sound fell into the street, followed by a wake of bright sparks. REIS hastened to the spot where it struck the earth and found a stone about fourteen inches in circumference. It was very hot, and charred the board upon which it was placed. The stone had the appearance of a volcanic production."—*New York Sun*, December 18.

[This stone is now in the possession of Messrs. WARD of Rochester, New York.]